AMATEUR AND COMMERCIAL RADIO WORLD LATEST NEWS OF

THE ANTENNA TOWERS

UP OVER 5,000 FEET

Passenger Tells of Radio Air-

plane Trip From New York to Albany.

By C. D. WAGONER. Listening to a fox trot and other nusical selections while soaring 5,000

from a ship at sea more than five hundred miles away and then the shrill

tion quite out of the ordinary, at least to me.

Often at home, in using my small crystal set, connected between a bed spring and a radiator in my bedroom, I have wondered at the mystery of the ether waves, but it was far more amazing to me to hear selections carried on these same uncanny waves reach my ears while a mile up in the air.

This was what I experienced in a flight recently in a five passenger Fokker monoplane, equipped by the General Electric Company with a radio set, from Curtiss Field, Mincola, to Roosevelt Field, Albany, a distance of about 175 miles. On the trip were Lieut, B. W. Maynard, the "Flying Parson;" Mr. and Mrs. Schlafke, the aerial bride and groom who the day before had been married by Maynard in the same plane over New York city; E. W. Dannals, radio operator, and Bert Acosta, the pilot.

LISTENS TO MUSIC

BIG RADIO CENTRAL ECLIPSES OTHERS

Station at Port Jefferson Is Now Only One-sixth of Its Future Size.

GREAT POTENTIALITIES

Fransatlantic Talk Is Easy and Messages Go Right From New York City.

Although Radio Central, the great transatlantic wireless station of the Radio Corporation of America, is easily the most powerful station in the world, it is dwarfed into insignificance by the vastness of the size it will become as the use of radio telegraphy increases. Radio Central, located a few miles east of Port Jefferson, on the north shore of Long Island, is at the present time, for all its greatness, just one-sixth the size of the station into which it is to develop. It can now send a message flashing half around the globe, but when it is completed the distance around the world will be a small yard stick to measure its power. Two of the twelve units of which it is to be composed are finished: when one more is complete radiotelephony between the United States and Europe will be an accomplished every day fact.

It is because of the potentialities of Radio Central that it is of such interest even to those who are not in the least attracted by a lure of WJZ's music or the perplexing problems of hooking together a receiving set.

At the present time the big station at Rocky Point consists of a line of twelve antenna towers, broken in the middle, connected with the Alexanderson high frequency alternators of 200 killowatts each. The towers stretch over a distance of three miles.

When Radio Central is finished it will consist of twelve lines of antenna towers, each of six towers. In appearance Radio Central will be like a wheel, the hub containing the power houses and other buildings of the station, and the antenna lines twelve spokes, each a mile and a half long. The present line of towers is simply a diameter across the vast circle which is to come.

Each of the great towers is 410 feet in height, with a cross arm 140 feet in length supporting the wires of the antenna of sixteen is used in each tower and 750 tons of concrete in each foundation. The towers support a multiple tuned antenna of sixteen wires, eight on each side of the cross arm. insatlantic wireless station of the tadio Corporation of America, is easily

The big alternators are located in a little brick power house. There a current of 23,000 volts coming from Port Jefferson is jumped to higher frequencies. Each unit is operated with 200 kilowatts in the antenna, and the antenna current is 700 amperes. This means a radiation of 60,000 meter-amperes. The wave length generally used at Radio Central is 16,500 meters.

The powerful alternators and the glantic towers are the spectacular part of the radio station, but buried beneath the sandy soil is a part equally necessary to transmission. This is the

the sandy soil is a part with the sandy soil is the "ground," the other side of the wave distributing system. The Long Island soil consists of quartz sand of extraordinarily high resistance. A counterpoise, or system of wires stretched beneath the antenna just above, but insulated from the carth, was considered, but rejected because of its troublesome uplace and expense.

lines of force radiating from the artenna.

The actual transmission of Central. The actual transmission of Central is the central central transmission of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations. A sending speed of Central is the most poem stations of an engineer in charge and fifteen assistants look after the big station.

Although normally a alower speed is used. A static consisting of an engineer in charge and fifteen assistants look after the big station.

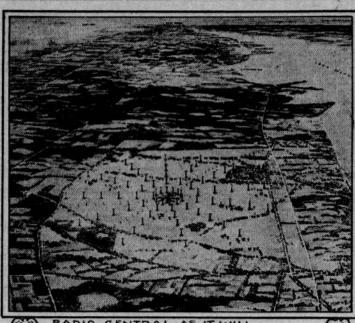
Although Radio ow, it is not the only one which makes the contral is the most powerful assistants look. Although repaired dynamics include the stations at the contral is the most powerful assistant look. Although repaired dynamos include the stations at New Brunawick and Tuckerton, N. 1.

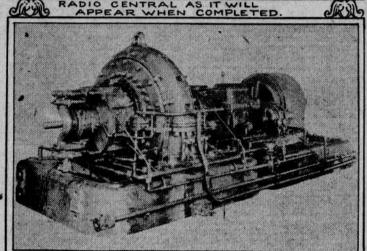
The alternators have been built at Schenectady and four more are now being finished. Other stations baving these light requency dynamos include the stations at New Brunawick and Tuckerton, N. 1.

Maron, Mass.: Kahuku, Hawail; Boll-naz, Cal., and Carnarvon, Wales.

Warsaw,

The World's Greatest Wireless Station.





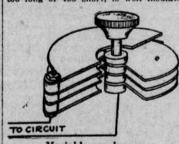
ALEXANDERSON ALTERNATOR

TUNING CRYSTAL DETECTOR SETS TO GET BEST RESULTS

With Proper Installation Assumed, Simple and Correct Operation of Receiver and Systematic Use of Controls Are Outlined.

over the ocean to Bordeaux or Berlin. Working separately, they daily keep in constant communication with any one of half a dozen stations in Europe. Hooked together, they can send a message crashing through bad atmospheric disturbances which in other years would have put a temporary end to transmission.

The alternator takes the place of the vacuum tube, which in less powerful stations plays the part of transmitter. The machine is simply a radio frequency dynamo, developing currents of tremendous frequencies. In it there is only one big moving part, a wheel, weighing several tons, which turns with a peripheral speed of several miles a



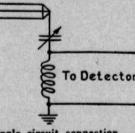
Variable condenser.

distributing system. The Long Island soil consists of quartz sand of extraordinarily high resistance. A counterpoise, or system of wires stretched beneath the antenna just above, but insulated from the carth, was considered, but rejected because of its troublesome uplaced because of its troublesome uplaced and expense.

Wires Plowed Into Ground.

Instead, by means of a special plow carrying a coil of wire, a great system of wires, spaced ten feet apart and each 1,000 feet in length, were buried twenty inches in the ground over a space a inches in the ground over a space in a stands on a Radio Central antenna stands on a Radio Central antenna stands on a roll the ground wires collect at miles long. The ground wires collect at miles long. The ground wires collect at miles of force radiating from the antenna.

There is not an operator at Radio. There is not an operator at Radio. and as clear of surrounding buildings



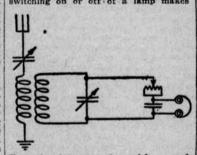
electrically to the greatest extent pos

The alternator is the invention of Ernett F. W. Alexanderson. The first of the big machines was installed in the New Brunswick station for the United States Navy Department just before the wave ended, in October, 1918. The alternator was sought by the Marconi interests, as one after it had been perfected. The General Electric Company, how-ver, refused to relinquish the alternator for foreign interests, and set aside a \$3,000,000 order. The Radio Corporation of America was then formed to use and entered the states of the states o

ber of turns which is used, for example, by a switch, or with some means for varying the electrical effect of the turns without actually changing the number of them. The variometer is such a means and is made by having the colinity to the theory of them. The variometer is such a means and is made by having the colinity of them. Also it is found that if there are connected in the circuit two metal plates, which are placed near to each other but not touching, and one of them its moved, this changes the electrical length of the circuit. Such a device is called a variable inductance, are used. There are two somewhat different did wars of connecting up the tuning devices which are in common use to-day. These are known as the single circuit tuner and the two circuit tuner.

The single circuit receiver is of course the simplest to operate. In this there are only the tuning control and the crystal. The proper procedure in tuning this type is to set the detector in maximum results. The most difficult part of this process is that if no signals are heard at first, it is impossible to tell whether the detector is in receptive condition or not. It is possible to maximum results. The most difficult part of this process is that if no signals are heard at first, it is impossible to tell whether the detector is in receptive condition or not. It is possible to maximum results. The most difficult part of this process is that if no signals are heard at first, it is impossible to tell whether the detector is in receptive condition or not. It is possible to tell whether the detector is in receptive condition or not. It is possible to tell whether the detector is in receptive condition or not. It is possible to tell whether the detector is in receptive condition or not of the condition or not of the part of the process of the defence of the condition or not. It is possible to tell whether the detector is in receptive condition or not. It is possible to the process of the condition or not of the process of the condition of the part of

and very desirable to connect up a d came the music, and it was wonderful.
Using a leather headpiece, which
clamped receivers to both cars, all
outside noise from the airplane motor
was eliminated and the music came
through just as well as in any land bell buzzer, a push button and a single dry cell battery so as to test the detector and set it in sensitive condition. Also it very often happens in a house equipped with electric lights, that the switching on or off of a lamp makes



Amateur Gets WJZ
and Even WGY on His Device.

The latest in pocket sets has been constructed by George A. Steler, known in the radio world as 2AAR, a radio amateus whose station is at 584 East 139th street, The Bronx.

Mr. Steler has been able to get not only WJZ in Newark, about fifteen miles away, but also WGY, at Schenectady, using a sixty foot single strand aerial mounted on the roof of a four tory house.

The set is in a case made of a clear t 3x3x114 inches. Both top and both of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged, and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of one cover is a coil on a fibration of the box are hinged and on the side of the fibration of the provided and attaintic avenues, starting Ma

IN THE RADIO FIELD

Dr. Royal S. Copeland, Commissioner of Health, to Lecture on Physical Culture at WJZ-Lectures by Tufts Professors From Amrad Station.

EVENTS OF THE WEEK

The program for the coming week of the various broadcasting stations which can be heard within a radius of several hundred miles of New York are presented herewith. During the week The New York Herald will print the daily program of the stations each morning.

Station WJZ, Newark. (WESTINGHOUSE.)

7.20 P. M.—'Jersey City Boys' Week," by T. H. Williams. 7.45 P. M.—'Proposed Hudson River Bridge," by Dr. Gustav Lindenthal. S. P. M.—Dr. Frank P. O'Nell, New Haven, Conn., barytone concert singer, and his brother. Emmett O'Nell, New York city, dramatic reader, will entertain the radio audience for the second time with sonas and dramatic readings. Program by Dr. O'Nell: "Top o' the Mornin," Manna Zucca: "Mother o' Mine," Tours; "Road to Mandalay," Speaks: "Rose of My Heart," Lohr: "Musica Prolbita," Gastalson (in Italian): "Two Grenadiers," Schumann, "The Publican," Van de Water, "Mavis," Craxton, Program by Emmett O'Nell: "Boots, Kipling; "Lasca," C'Talline's C'Calline's was eliminated and the music came through just as well as in any land receiving set.

We also heard WJZ and when we neared Hudson WGY began its program and this came in so loudly that all other stations were drowned out and we could hear the music in our small cabin without putting the headplece to our ears, a sensation somewhat of having a phonograph on the plane with us.

We had been in the air an hour and were near Matteawan, when Dannals announced that he had just picked up a message from the S. S. Aquitania, then 500 miles cast of Ambrose Lightship. We made periodic tests with Mitchel Field and kept in communication with it until we reached Hudson, when WGY came into the air so loud that all other messages were drowned.

From Hudson on to Albany, we centered our radio efforts on the Knickerbocker Press in Albany and the General Electric station in Schenectady. We landed in Albany soon after 4 o'clock.

thors. Courtesy of the "Outlook," "Scientific American" and Harper & Bro.

THURSDAY.

7:00 P. M.—"Jack Rabbit Stories," by David Cory, courtesy New York Evening Mall.

7:50 P. M.—"Chinese Gordon," by Col. H. G. Prout, second in command at the time of Gordon's ill fated expedition.

7:00 P. M.—Concert by the Columbia University Glee Club.

7:00 P. M.—Concert by Raiph W. Tag, barytone: Miss Isabel Sprigg, accompaniat. Program: Prologue from Pagliace!, Leoncavallo: "The Seekers," Raiph W. Tag; "Gunga Din," poem by Klpilng, music by Raiph W. Tag; "Gunga Din," poem by Klpilng, music by Raiph W. Tag; "Young Tom O'Devon," Kennedy.

9:00 P. M.—Recital by Miss Lucille Collette, violinist; Miss Hoffman, planiste, courtesy of Ed. G. Simon.

9:45 P. M.—Plano recitai by Raiph Reichenthal, a well known recording artist and recently student of the Damrosch School of Musical Art. New York. Program: "Persianna," White: "Canadian Capers," Chandler-White-Cohen; "Moon River," Lee David; "Good-Rye Shanghai," Meyer; "Kitten on the Keys," Confrey; "Ka-lu-a," Kern.

FRIDAY.

7.06 P. M.—"Man in the Moon" Stories (c)
Newark "Sunday Call."

7.30 P. M.—"Oral Hyglene," by T. P. Hyatt
of New York.

7.45 P. M.—"The Trend of Business Conditions." a financial letter will be read by
Richard D. Wyckoff, editor of the "Magasine of Wall Street."

8.00 P. M.—"Art and Interior Decoration."
by Jesse Martin Rivese, director of this department for "Country Life"; courtesy
Doubleday, Page & Co.

8.30 P. M.—Concert by Colgate Band, 50
nleccs, under the leadership of Harry Murphy. The band is composed of some of the
best musicians of Jersey City.

9.30 P. M.—Concert by the Temple Four
Quartet of Yonkers.

SATURDAY. FRIDAY. SATURDAY.

7:00 P. M.—"Uncle Wiggliy's Bedtime Sto-ries." by Howard R. Garls, the author of the "Uncle Wiggliy Stories printed in many newspapers and frequently appear-ing on KDEA's and WBZZs ratio pro-73 P. M.—"The Manufacture of Watches." by John L. Ludwey. 145 P. M.—"Fashion Talke." by Mr. Hency Blackman Sell, editor of "Harper's Ba-Blackman Sell, editor of "Harper's Basar," to 9:30 P. M.-Popular dance hits by the "Meadowbrook Syncopaters," Jazziand's Kings of Harmony, now starting their sucond successful season at the famous "Log Cabin," Mountain View, N. J. The boys John Klersy, Jr., plano: Frank B. Dalley, violin; N. Vanderlippe, banjo Wes, H. Mortimer, cornet: Henry C. Muller and Alan R. Rice, suscophones, and Fred S. Eckert, drums. The program with include "Song of India," "Cutie, "Tell Her at

(General Electric.)

THURSDAY.

Miss Helen Stevens; "Serenade Espagnole."
Chaminade-Kreisler, violin solo, Edward
Rice; "You'd Better Ask Me" (by request),
Lohr, barytone solo, Glorgio Termin; (a)
Grand Opera Strains, Johnstone, (b) "Believe Me If All Those Endearing Young
Charms," Moore, mandolin solos, James
H. Johnstone; "The World Is Waiting for
the Sunrise," Foliz, soprano solo, Mrs.
Muriel A. Varney: "Mazurka," ChopinKreisler, violin solo, Mr. Rice; "Light
Out March," McCoy, tenor banjo solo, Mr.
Johnstone; "Stealing," fox trot, Sullivan,
plano solo, Duo Art, as played by Phil
Ohman: "Valse Triste," Sibelius, violin
solo, Mr. Rice.

(Westinghouse.)

WEEK DAY SCHEDULE.

(Westinghouse.)

WEEK DAY SCHEDULE.

10: to 12:30 A. M.—Music.

2:20 to 1 P. M.—Music.

2:20 to 1 P. M.—Music.

4: to 4:20 P. M.—Music.

7: 4: to 4:20 P. M.—Music.

7: 5 P. M.—Special news, Government mar
7: 45 P. M.—Special news, Government mar
8: terports, summary of New York Stock

Exchange, weather report,

9: to 9:30 P. M.—Musical program.

9: to 9:30 P. M.—Avington program.

9: 55 to 10 P. M.—Avington time signals.

MONDAY.

at the piano.

40 P. M.—Program by the Hackel-Berge Trio: (a) "Kamenci Ostrow," Rubenstein.

(b) Barcarolle from "Tales of Hoffmann,"

(6) Barcaron (7) Barcaron (7) Barcaron (7) Barcaron (7) Barcaron (8) "There is No Death." (6) "The (7) Barcaron (8) Barcaron (8) "There is No Death." (6) "The (7) Barcaron (8) Bar

Gray Squirrei Paints a New Sign. Given by Elsie Jean, well known writer of children's stories.

10:30 P. M.—Trogram by the Gloria Trumpeters—Katherine Williams, Louiso Gura, Cora Roberts, Mabel Coopman and Frank Shackelford, tenor. J. Thurston Noe at the plano. "March Militaire, Tschaikowsky. Tenor solo, (a) "Thie Passion is but an Ember," Lohr, Frank Shackelford, (b) "Molly," Herbert, Selections, (a) "Robin Songs in the April Trees," McDowell (b) Banjo Songs, Homer; (c) Polonalse, Domalor, Beethoven, Tenor solo, (a) "Little Gray Home in the West," Lohr, Frank Shackelford; (b) "Pipes of Gordon's Men," Hammond. Selections, Gloria Trumpeters, (a) Group of old favorites, (b) "Recessional," De Koven. Tenor solo, "Inter Nos," MacSadron, Frank Shackelford, "Fackeltang" in B flat, Meyerbeer, by Gloria Trumpeters.

Station WGI, Medford Hillside,

Station WGI, Medford Hillside,

SUNDAY

50 P. M.—Radio church service. Sermon by the Rev. Denton J. Neily, First Baptist Church of Medford, "The Radiant Life." Double quartet, First Baptist Church, Se-lections, "Onward and Upward" (Palmer), "Nearer to Thee" (Tenny), "Guide Us and "Nearer to Thee Guard Us." 45 P. M.—Marjorie E. Berry, soprano. Se lections, aria, "Caro Nome" from Rigo

RADIO WITHOUT AN AERIAL

Use the "Socket Aerial Plug." At-tach to any electric light socket. Perfect results. Used anywhere in any room. Eliminate expense of aerial wire and switches, also danger from lightning and storms. Complete postpaid \$2.50. No current in wire to set. GALEY CO., Box 386 East Liberty, Pa. letto" (Verdi), "One Fine Day" from "Madame Butterfly" (Puccini) "Home, Sweet Home" (Webster). MONDAY.

Cross.

1:30—Donald Byrne and Francis Gempcois bay soprano soloists of the Paulist Choristers, if popular ballads.

1:50—William Coburn, Scotch barytone.

1:10—Song hits from "Zero," the Bostoi University show.

THURSDAY.

Station KDKA, Pittsburgh.

SUNDAY.

11:00 A. M.—Services of Point Breeze Pres-byterian Church, Fifth and Point avenues, Pittsburgh, Pa., Dr. P. H. Barker, minuter. 2:45 P. M.—Children's Bible stories, "The Wee Sheep and the Great Shepherd." 3:00 P. M.—Radio chapel at KDKA station, conducted by the Rev. A. W. S. Garden of Emanuel Episcopal Church, North and Allegheny avenues, North Side, Pittsburgh, Pa. Pa. Pa. —Services of the Calvary Episcopal Church, Shady avenue, Pittoburgh, Pa., the Rev. E. J. Van Etten, rector.

Pa., the Rev. E. J. Van Etten, rector.

MONDAY.

5:00 P. M.—'Monthly Review of Business Conditions," Clark Hammond, vice-president of the Columbia National Rank, Pittsburgh, Pa., "The Canadian Risches—or Fifty Switzerlands in One," Grayes Druitt Latus, travel and steamship editor Pittsburgh Dispatch. Pittsburgh, Pa.; from Pittsburgh Post Studio.

5:20 P. M.—The Edgar Thomson Sted Works orchestra of Braddock, Pa., Walter Balle Erown, conductor; vocal selections by Florence Kipp, contraste, and Gladys E. L. Caldwell, accompanies.

Station. WBZ. Springfield.

00 P. M.-John Roberts, baryt. Harriet Schaeffer, boprano solo Second Meth at Church.

Station WVP, Fort Wood, N. Y. C.

Signal Corps, U. S. A.

Pack to Old Virginny (Bland), Ell and Fairs' (Denstoore), Miss Berth: 'Hark, Hark, the Lark' (Schubert-Liszt), Mr. Davis: 'Polichinelle (Rachmanineff), Mr. Davis: 'The Hand of You' (Bond), 'The Nightingale' (Davis), 'Nursery Rilymes' (Curran), 'Ol' Carlina' (Cooks), Miss

POINTERS FOR RADIO ENTHUSIASTS

THE second edition of "Music From the Clouds"-Continental's handsomely illustrated two-color folderdescribes in detail complete installations built around the Federal Jr., the Aeriola Sr., the Westinghouse RC Set, the Grebe CR 9 and the Paragon RA Ten.

It also incorporates valuable items of radio information which will materially aid your success in radio.

Drop in at the store or send a postcard for your copy-it's

CONTINENTAL RADIO AND ELECTRIC CORP

RADIO BROADCAST

Edition (100,000 copies) of first number has been sold out

The only way to be sure of copies is to send \$3 for a year's subscription

DOUBLEDAY, PAGE & Co., Garden City, N. Y.

Doubleday, Page & Co's